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darker, with a few one- to several-celled, dark brown to black chlamydo-spores.

The above descriptions will serve to distinguish these strains readily. Details of morphology and results of more culture work will be reported later. Since these four strains were so easily obtained last summer it is very likely that more strains may be isolated by extending the work and the field. This difference in strains of *Ph. pirina* may account for the fact that investigators disagree as to the parasitism of *Phyllosticta*. They may have worked with different strains, some of which may be parasitic, while others are purely saprophytic or, at most, facultative parasites. Inoculation experiments to throw further light on this phase of the subject are now under way and results will be reported in a later publication.

C. H. CRABILL

BLACKSBURG, VA.,
May 1, 1912

THE NORTH CAROLINA ACADEMY OF SCIENCE

THE eleventh annual meeting of the North Carolina Academy of Science was held at the University of North Carolina, Chapel Hill, on Friday and Saturday, April 26 and 27, 1912.

The meeting of the executive committee, held early in the afternoon of the first day, was followed by a general meeting for the reading of papers. At the night session the academy was welcomed to Chapel Hill by President Venable, of the university, and then President H. V. Wilson, of the academy, delivered his presidential address, "Zoology in America before the Present Period." Next Professor A. H. Patterson gave a demonstration of luminous electric waves. Then by invitation Dr. Thos. W. Pritchard read a paper, "Wood Distillation," descriptive of the fitting up and working of a plant at Wilmington, N. C., for the utilization of waste pine wood. At the same hour Dr. W. S. Rankin, secretary of the state board of health, delivered a lecture on hygiene and sanitation before the student body of the university in Gerrard Hall.

Adjournment was then had to the hospitable home of Dr. Isaac H. Manning, where a smoker was given the members of the academy by the local members.

On Saturday morning at 9 A.M. the academy convened in annual business meeting. Reports were made by the secretary-treasurer and by the several stated committees. Five new members were elected. These with the 85 members on the roll on January 1 give a total membership of 90. The report of the secretary-treasurer showed that in membership, in interest shown in its work and in its finances, the academy has never been in better condition.

The following officers were elected for the ensuing year:

President—C. S. Brimley, Raleigh.

Vice-president—John F. Lanneau, Wake Forest College, Wake Forest.

Secretary-treasurer—E. W. Gudger, State Normal College, Greensboro.

Additional Members of Executive Committee—Julian Blanchard, Trinity College, Durham; S. C. Clapp, State Department of Agriculture, Raleigh; John A. Ferrell, State Board of Health, Raleigh.

At 9:30 the academy and the North Carolina Section of the American Chemical Society held a joint meeting, at which Dr. J. E. Mills, of Columbia, S. C., presented a report on "Molecular Attraction and Gravitation." Following this the reading of papers on the program of the academy was resumed.

The total attendance was 31 out of a membership of 90. In addition to the special papers already noted, there were 29 numbers on the program. Of these four were read by title, the other 25 were given in order when called for. Two things characterized the meeting. First the number of papers dealing with hygiene, sanitation and public health; and second the discussion which followed the presentation of nearly every paper.

In addition to the presidential address and other papers previously noted, the following were presented:

Notes on the Distribution of the More Common Bivalves of Beaufort, N. C.: HENRY D. ALLER, Director U. S. Fisheries Laboratory, Beaufort, N. C.

Of the approximately 90 species of bivalves found in the vicinity of the U. S. Fisheries Laboratory at Beaufort, N. C., 39 are considered in this paper. Since those found sparingly and those dredged in deeper water offshore, or those represented by valves cast up on the beach, are not available for scientific purposes, only the more common forms are dealt with. It is the purpose

of this paper to indicate which species are available in a living condition, specific localities where they may be found and so far as possible to give some idea of their abundance.

While a paper of this kind is of necessity incomplete, it is hoped that it may be of service to prospective investigators by pointing out what material they would have at their service under ordinary conditions at Beaufort.

The full paper is published in the current number of the Bulletin of the North Carolina State Board of Health.

The Value of Vital Statistics and their Relation to Public Health: WARREN H. BOOKER, State Board of Health, Raleigh.

Vital statistics are valuable to the nation, since they enable us to study at close range the general movements of mankind, and to measure quickly the effect of any line of action on these movements. We should know as much concerning life and health conditions throughout the state and country as we now know about crop and weather conditions.

Vital statistics are valuable to the individual in many legal questions involving facts concerning births and deaths.

Students of medicine and sociology find the study of vital statistics very profitable.

The greatest value of vital statistics is found in connection with their relations to public health work. They indicate the kind of work that is most needed; also the efficiency of that work. Cities, towns and localities having abnormally high preventable death rates can readily be found and shown where and how to take the necessary steps to reduce these death rates. Reduced death rates will eventually form the measure of public health work.

The full paper will appear in the current number of the *Journal of the Elisha Mitchell Scientific Society*.

Further Notes on the Yellow-fever Mosquito at Raleigh, N. C.: C. S. BRIMLEY, Raleigh.

Describes their great abundance during the summer of 1911, and gives possible reasons for the same.

This paper is published in the current number of the *Journal of the Elisha Mitchell Scientific Society*.

Race Preservation: Rev. GEORGE W. LAY, Rector of St. Mary's School, Raleigh, N. C.

All nature is one, and there is union in the one plan that includes natural science and religion. Natural science has turned over part of its sub-

jects to other departments, *e. g.*, light and sound belong to psychology as well as to physics. In eugenics natural science must go beyond the purely moral forces of evolution, and include the mental and moral forces of mankind. Environment must likewise include the mind and will of man as well as things purely natural.

The two great forces which govern natural evolution are the appetites, which secure the preservation of the individual in one case, and of the race in the other. Nature works preeminently for the race and is prodigal with individual life. When the mind of man enters into the methods that are applied to the breeding of the lower animals, a new element is added. He has used both the above laws in breeding and has sacrificed the individual to the race, as nature does. The results have been beneficial, and have been attained much more quickly than could be the case under nature alone, and have been in accordance with a preconceived plan. The resulting breeds are better suited to their environment only in case the mind of man is added to the purely natural forces as a part of that environment.

In eugenics, which is the effort to improve the breeding of human beings, the moral and religious principles of mankind are added as a new force to those previously mentioned. Here man has largely disregarded the natural forces that sacrifice the individual to the race, and has therefore worked only to preserve the individual. The result has been a partial failure, since the natural forces that preserve the race, largely at the expense of the individual, have been ignored.

The scientist and moral teacher must learn from each other and help each other. The scientist must recognize mental and spiritual things as true forces in the evolution of the human race, and the moralist must recognize that both the purely natural forces, working through the two kinds of appetites whose misuse leads to the deadliest sins, and on whose nature the two great sacraments are founded, are no less a part of the divine plan than those spiritual forces which constitute the special function of religion. We can not interfere with the great plan of the universe, or use any of its forces, unless we consider it as a whole, whose parts are in complete and necessary harmony.

To be published in full in the Bulletin of the North Carolina State Board of Health.

Notes on the Larvæ of the Marbled Salamander:

E. W. GUDGER, State Normal College, Greensboro.

Larvæ one and a half to two and a half inches long, with external gills, have been taken in brooks in the college park for several years past. This spring some thirty or forty were taken in a muddy pool in the same park. When caught these were nearly colorless, but when exposed to the light in aquaria set before windows in the laboratory they very quickly became pigmented. These were first thought to be the young of the common salamander which had retained their gills over winter, but discussion of the paper elicited the interesting information from Mr. C. S. Brimley that the Marbled Salamander lays its eggs in the fall; these are hatched and the larvæ retain their gills over winter, losing them in the late spring. Some kept by the writer for a month now show only stumps of these structures.

The Gloomy Scale, an Important Enemy of Shade Maples in North Carolina: Z. P. METCALF, Agricultural and Mechanical College, West Raleigh.

This paper summarized very briefly the results of three years' experiments carried on by the State Department of Agriculture for the control of this insect. A brief history of the insect was also given, together with some notes on its present distribution and destructiveness and life history.

To be published in full in the current number of the *Journal of the Elisha Mitchell Scientific Society*.

Two Parasitic Hymenomycetes: GUY WEST WILSON, Agricultural and Mechanical College, West Raleigh.

Attention is called to the attacks of apples in the Piedmont section of the state by *Septobasidium pedicellatum* (Schw.) Pat., which also occurs over a considerable area of the southern states on various hosts. *Fomes roseus* (Albert & Schw.) Cooke is also noted as causing a disease of the red cedar, locally very destructive in eastern North Carolina.

Note on the Fundamental Bases of Dynamics: WM. CAIN, University of North Carolina, Chapel Hill.

Defining mechanics as that science which treats of matter, at rest or in motion, under the action of force; weighing, by both the equal armed balance and the spring balance, is fully discussed and formulas presented. Mass and force are then discussed for both the engineers' and the absolute systems.

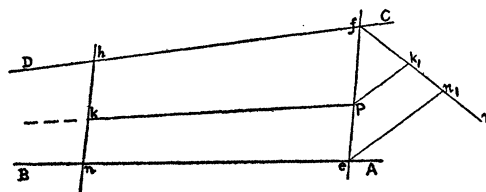
This paper will appear in the next number of the *Journal of the Elisha Mitchell Scientific Society*.

Discovery of Some New Petroglyphs Near Caicara, on the Orinoco: T. A. BENDRAT, University of North Carolina, Chapel Hill.

In the winter of 1908 and 1909, while surveying the region about Caicara, Venezuela, the writer discovered some new petroglyphs, which belong geographically and genetically to the same large group of stone-carvings found scattered over a wide area which is bounded by the Orinoco, the Atabapo, the Rio Negro and the Cassiquiare. While Alexander von Humboldt mentions only two petroglyphs from the region of Caicara, "el sol" and "la luna," of which the writer saw only "el sol," neither he nor any other traveler who ever touched that point seems to have known any of the stone-carvings found by the writer. These newly discovered petroglyphs occur on the banks of the Orinoco and in the adjacent forest. They may be divided up into three distinct groups, one representing the simplest type and consisting of almost geometrical circles, one in the other, the center of the most inner one being hollowed out; another one group of a more complicated type and of more fantastic design, of which only one figure was found; and a third group that evidently represents the highest type in the development of this art of petroglyphy and that comprises "el sol," that was already known to Humboldt, and the new petroglyph that was discovered by the writer, namely, "el tigre." All these petroglyphs are supposed to have been produced in prehistoric times. As to their meaning there exists quite a number of theories. The writer holds the view on the base of extended studies in fetichism that they represent records of earlier and later fetichism, while they have served, at the same time, as an indirect means to develop the art of sculpture that grew out of the art of petroglyphy.

To be published in full in the next issue of the *Journal of the Elisha Mitchell Scientific Society*.

Solution of the Draftsman's Difficulty—To draw from a given point a line which, if extended, would pass through the meeting point of two given lines whose point of meeting is beyond reach: J. F. LANNEAU, Wake Forest, N. C.



Let P be the given point and AB and CD the given lines intersecting at a point beyond reach.

Construction.—Through P draw any line, cutting AB and CD at points e and f ; and at some distance from fe , draw hn parallel to fe . Draw fr , at any convenient angle with fe . Take fn equal to hn . Draw Pl parallel to en . Lay off nk equal to n_1k_1 . Then Pl is the line sought. If produced, it would pass through the distant intersection of AB and CD . (Proof omitted.)

Note.—When the given point P is not between the given lines, the above construction still applies. In this case, put f and h on the line furthest from P .

George Marcgrave, the First Student of American Natural History: E. W. GUDGER, State Normal College, Greensboro.

George Marcgrave was a member of the Dutch expedition to Brazil under Johann Moritz, Count of Nassau-Siegen, during the first half of the seventeenth century. He assiduously studied the animals and plants of Brazil during the years 1638–1644. In 1648 his drawings and observations under the title “*Historiæ Rerum Naturalium Brasiliæ*” were published jointly with the “*De Medicina Brasiliensi*” of William Piso under the general title “*Historia Naturalis Brasiliæ*.” Marcgrave’s part of this work covers 303 folio pages, in which he describes 301 plants with 200 figures and 367 animals, of which 222 were figured. Of these 668 forms practically all were new to science and probably none of the 422 figured had ever been drawn before.

Marcgrave knew nothing of the classification of flowers based on stamens and pistils or of fishes by the count of fin rays, but his descriptions are for the times remarkably clear and his drawings sufficiently exact for the plant or animal to be unmistakably recognized. No country in its early exploration has ever had such a great work published on its natural history.

The full paper will shortly be published in *The Popular Science Monthly*.

Capture of Raleigh, N. C., by the Wharf Rat: C. S. BRIMLEY, Raleigh.

Up to March, 1909, the only species of house rat seen by the author in a residence of over twenty-five years was the roof rat (*Mus alexandrinus*); since then the brown rat or wharf rat (*Mus norvegicus*) has overrun Raleigh, mainly or entirely replacing the former species.

The full data appear in the current number of

the *Journal of the Elisha Mitchell Scientific Society*.

No abstracts have been received for the following papers:

“Some Records of Incipient Fern Growth in Carboniferous Time,” Collier Cobb, University of North Carolina.

“The Seedling of the Water Oak,” W. C. Coker, University of North Carolina.

“Notes on Mutation,” W. N. Hutt, State Department of Agriculture.

“The Effect of Temperature on the Contact Resistance of Carbon on Copper,” P. H. Daggett, University of North Carolina.

“The Dispensary as a Factor in the Prevention and Cure of Hookworm Disease” (lantern), John W. Ferrell, State Board of Health.

“The Toxicity of Cotton Seed Meal,” W. A. Withers and B. J. Ray, with the cooperation of R. S. Curtis and G. A. Roberts, Agricultural and Mechanical College.

“The Walden Inversion,” Alvin S. Wheeler, University of North Carolina.

“The Work of the State Laboratory of Hygiene,” Director C. A. Shore, Raleigh.

“Some Reduction Phenomena in Hydroids,” H. V. Wilson, University of North Carolina.

“Some New Questions Concerning Ventilation,” C. W. Edwards, Trinity College.

“The Electrical Resistance of a Flowing Conductor,” A. H. Patterson and V. L. Chrisler, University of North Carolina.

“The Water Molds of Chapel Hill, N. C.,” W. C. Coker, University of North Carolina.

“Further Notes on the Geology of the Carolina Coast Line,” Collier Cobb, University of North Carolina.

“Transient Electrical Phenomena and their Relations to Modern Problems in Electrical Engineering,” P. H. Daggett, University of North Carolina.

“The Toxic Action of Hematin and Bile,” W. H. Brown, University of North Carolina.

“Notes on the Maturing of Bermuda Grass Seed,” O. I. Tillman, State Department of Agriculture.

“Studies of Cottonseed Meal Intoxication as to Pyrophosphoric Acid,” W. A. Withers and B. J. Ray, Agricultural and Mechanical College.

E. W. GUDGER,
Secretary

STATE NORMAL COLLEGE,
GREENSBORO, N. C.,
May 13, 1912